UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

JAN 23 2015

Bob Piniewski
Settling Defendants' Project Coordinator
Project Navigator, Ltd.
10497 Town and Country Way, Suite 830
Houston, TX 77024

RE: Malone Service Company Superfund Site

Dear Mr. Piniewski:

The Environmental Protection Agency (EPA) has completed review of the Malone Service Company Superfund Site Draft Phase Two Remedial Design/Remedial Action Work Plan; EPA and Texas Commission on Environmental Quality comments are enclosed.

If you have any questions, please contact me at 214.665.7188; or via email at – abshire.david@epa.gov.

Sincerely,

Charles David Abshire
Remedial Project Manager

Enclosures

cc:
Steven M. Jawetz, Common Counsel
Marilyn C. Long, TCEQ

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EPA and TCEQ Comments on Draft Malone Service Phase-2 RD/RA Work Plan

EPA COMMENTS

General Comment:

The 2009 ROD statement (Section 2.7.1.4) "All Site sludge in the Sludge Pit, Oil Pit, API separators and ASTs will be remediated, as well as oily waste (principal threat waste) found in subsurface soils which extend to a depth of 15 feet bgs.", indicates that source material (oily waste) in subsurface soils are to be excavated. The ROD also states (Section 2.9.5.4) "Impacted subsurface soils would be excavated from above the top of the uppermost water-bearing unit"; indicating that the interval for excavation of affected soils is an interval "above" the top of the water bearing unit. The ROD further states "Source material was discovered in subsurface soil, but not in ground water, during the RI."; considering that investigations indicate that ground water exists primarily in the paleochannel, the statement "...but not in ground water..." is specific to areas above the paleochannel.

A concern exists for excavations into the shallow confined aquifer within the Subtitle "C" Cell outline. Excavations into a confined aquifer (i.e., the paleochannel) to remove source material would allow ground water to flow into the excavation several feet above the top of the aquifer; it appears that several feet of water in the excavation would not allow compaction of the backfill to the density required to support the Cell contents at that specific location. Considering that the ROD states that impacted subsurface soils would be excavated from above the top of the uppermost water-bearing unit and that source material was not found in ground water, EPA will allow excavation of source material to within 3-feet of the top of the uppermost water bearing unit (i.e., the aquifer, not the top of the aquifer's hydraulic head which the Malone Cooperating Parties (MCP) considers the top of the uppermost water bearing unit). EPA suggests that a geoprobe/powerprobe unit be used to determine the optimum depth of excavation in areas above the paleochannel; that is, if existing subsurface data in that area does not sufficiently define the top of the uppermost water bearing unit.

There are different requirements for excavation of affected surface/subsurface soils and excavation of source material (as above). The 2009 ROD Section 2.7.1.4 identifies the soils above remediation levels excavation interval with "EPA has determined that the surface soil depth interval for remediation of Site soils will extend to 2 feet below ground surface (bgs); therefore, institutional controls will be imposed upon the 2- to 5-foot depth interval..." EPA's position is that affected surface/subsurface soils above the remediation levels require excavation from 0-2 feet, which is consistent with other EPA non-residential soil cleanup sites; affected subsurface soils below 2 feet require Institutional Controls, which are enforceable by the State of Texas. This is specific to surface/subsurface soils above the soil remediation levels, not source material within subsurface soils.

The 2009 ROD (Section 2.7.1.4) states "All Site sludge in the Sludge Pit, Oil Pit, API separators and ASTs will be remediated, as well as oily waste (principal threat waste) found in subsurface soils which extend to a depth of 15 feet bgs." Some proposed excavations areas to remove source material (i.e., oily waste/sludge) in subsurface soils do not encounter ground water which can affect backfill and compaction efforts (e.g., Maintenance Area); these areas will require excavation of source material to 15 feet bgs or to the base of the visible source material, whichever is less.

Specific Comments:

1. The MCP proposes to use a Geosynthetic Clay Liner (GCL) as the first protective layer below the Subtitle "C" equivalent cell. EPA requires a 3-foot Compacted Clay Liner (CCL), with a hydraulic conductivity of $\leq 1 \times 10^{-7}$ cm/sec, as the base. However, RCRA 40 CFR 264.221(d) grants the Regional Administrator authority to approve an alternative design if the owner or operator demonstrates that specific operating practices, together with location characteristics are sufficient for such alternative design.

   The June 2008 Feasibility Study (FS) states that during installation of monitoring wells ground water was encountered at 8 to 16 feet bgs. Soil borings and monitoring wells indicate that 5 to 12 feet of natural clay exists above the shallow aquifer (i.e., the paleochannel) and in the area proposed for the Subtitle "C" cell. The April 2006 Remedial Investigation (RI) report states that the shallow aquifer is confined in the eastern portion of the Site - where the cell will be located – indicating that the upper clay is a barrier to upward flow of ground water; therefore, the conclusion would be that it is also a barrier to downward flow. The June 2008 FS Report also states that the shallow aquifer is under confined conditions. EPA's position is that sufficient clay thickness to support the cell is provided by natural clays.

   Considering that sufficient native clay exists between the base of the proposed Cell and the top of the upper most aquifer, the GCL has the hydraulic conductivity requirement, and that EPA has approved the use of a GCL at other EPA Region 6 sites following the requirements for specific operating practices and location characteristics, the use of a GCL is approved. However, excavations must be backfilled with two (2) feet of clay to maintain the integrity of the GCL and Subtitle "C" equivalent cell. Excavations include the removal of soil below the existing surface to place the leachate detection system. It must be noted that although EPA has approved the MCP's request for an alternative design, the MCP is responsible for the integrity of the cell for as long as hazardous waste remain within the cell.

2. How will the MCP prevent premature hydration of the GCL (Section 3.03) during the phased approach proposed for Cell construction (Section 2.2.7, page 22)?

3. Section 2.2.4.2, page 10, 3rd paragraph: "Backfilling operations will continue until soil is placed above the level of the groundwater table." This statement appears to be specific to the Sludge Pit. Considering that the groundwater head is located approximately 5 feet below surface, is the MCP considering leaving an excavation to form a pond following excavation of the Sludge Pit?

4. Section 2.2.4.3, page 11, 3rd paragraph: The statement "When test results show achievement of the performance criteria, the solidified sludge will be excavated, loaded into off-road dump trucks, and hauled to the cell for placement." indicates that the treated sludge will meet the performance criteria prior to placement in the cell. Considering that the first part of the pit solidification involves bailing sludge from the deeper areas from the center of the pit into bins on top of the pit perimeter for treatment, how will the MCP manage the solidified material within the period needed the meet the performance criteria prior to placement in the cell?

5. Section 2.2.4.3, page 11, 2nd paragraph: The statement "a sample location and depth will be selected once the batch is thoroughly mixed…" indicates that only one sample depth will be evaluated. This is acceptable for mixing in bins on top of the perimeter; however, the 3rd paragraph states that "…the remaining sludge at the bottom of the pit will be solidified in-situ

(an approximate 14 feet interval)." As EPA indicated in the past, considering that the mixing will be conducted in-situ and that the reagents will be placed on top of the sludge prior to mixing, a solidified thickness of 14 feet should have a sample collected, at a minimum, one from the middle of the solidified interval and an additional one within approximately 3-feet of the bottom of the solidified material depth to be excavated.

6. Section 02302, Part 3 – 3.05 – 3: "If unstable or marginal, consider performing additional passes, using thinner lifts, or altering the moisture content (wetting or drying as needed to be closer to the standard Proctor optimum moisture content)." It appears that this "test fill" will be a one-time test to demonstrate that the density criterion can be met; following a successful test, full-scale waste placement and compaction in the cell will commence without any further testing. The question is, wetting or drying during the test may be needed to pass the test, how will this affect the later volumes of solidified material to be placed in the cell? Specifically, considering that wetting or drying was needed to pass the test, how will the MCP know that the material passes the requirements without conducting periodic testing during full-scale waste placement? Considering the different densities/stratification of material in the pits, periodic testing during full-scale waste placement may be needed. As the MCP is aware, many field tools are available to test for moisture/density of compacted soils.

TCEQ COMMENTS

DRAFT - *Phase Two Remedial Design and Remedial Action Work Plan* (October 20, 2014, Rev. A)

1. General questions presented below are related to the following sections and associated appendices/drawings:
   - Section 2.2.5 Soil Excavation and Placement (Pages 14-16 and Appendix B/Specification 02302 Waste Placement and Compaction, and Appendix C/Figures/Appendix1.1)
   - Section 2.2.6 Design of RCRA Subtitle C Equivalent Cell (Pages 16-22 and Appendix A/Construction Drawings)
   - Section 2.2.7 Subtitle C Equivalent Cell Construction (Pages 22-23 and Appendices A & B).

   Issues/Questions:
   A. What is the base excavation elevation of the cell (i.e., Phases 1 – 4) relative to the thickness of the confining layer (Appendix A, Drawing #7), groundwater potentiometric elevation (Appendix A, Drawings #3 & 7), and paleochannel (Appendix D/Appendix 1, Figure 5; and Appendix 1.2, Figures 18, 20, 21, 22 & 23)? Is there potential for hydrostatic uplift?
   B. What is the base excavation elevation of the LCS/LDS trenches (Appendix A, Drawings #4, 12 & 13) and/or the depth below the cell subgrade relative to the thickness of the confining layer, groundwater potentiometric elevation (Appendix A, Drawing #3), and paleochannel (Appendix D/Appendix 1, Figure 5; and Appendix 1.2, Figures 18, 20, 21, 22 & 23)? Is there potential for hydrostatic uplift?

2. Section 2.2.8 Subtitle C Equivalent Cover System Design (Page 24 and Appendix B/Specification 02920 Seeding). Reference is made to paragraph one/last sentence where it is stated, "Permanent seeding will consist of a mix of local grass types which will provide the necessary vegetative cover." After consultation with TCEQ staff versed in vegetation types/vegetative cover, the TCEQ does not concur with the suggested seed mix/plant species listed in Appendix B/Specification 02920 (Part 2). The TCEQ recommends that MCP consult with local experts to

identify compatible native/local plant species that will not compromise the integrity of the cell cover and are suitable for the site.

3. Section 2.2.10 Storm Water Management (Page 25). Refer to TCEQ email to Mr. David Abshire, dated January 12, 2015, regarding the Storm Water Management Plan, Appendix #2.

4. Institutional Controls (ICs). TCEQ reserves comments at this time.

5. Appendix B Construction Specifications

A. Section 02071 Geotextile

- Is there an ASTM standard for repairs? If so, please cite in the reference section.
- Part 3.04 Seaming and Overlaps: If seaming with polymeric thread, are there provisions for the detection of needles/broken needles from the seaming activities (i.e., to mitigate punctures)? If so, please include a brief statement and/or reference document for the respective seaming protocol.
- Part 3.05 Repairs: Reference is made to repairs by sewing a patch; is there a manufacturer's standard/industry standard or an ASTM standard for the detection of needles/broken needles from the repair location (i.e., to mitigate punctures)? If so, please include a brief statement and/or reference document for repair protocol.

B. Section 02072 Geosynthetic Clay Liner

- Is there an ASTM standard for repairs?
- Part 3.05 Repairs: Reference is made to a replacement patch; however, is there a manufacturer's standard/industry standard or an ASTM standard for the repair? Will there a determination that there is no loss of bentonite from the adjacent GCL and in the patch/repair location? If so, please include a brief statement and/or reference document for repairs.

DRAFT - *Construction Quality Control Plan* (October 20, 2014, Revision 1)

1. Section 2.0 Project Responsibility and Authority (Page 3). In Section 2.2 TCEQ Project Manager, please replace Ms. Duke's name with Ms. Marilyn Czimer Long, P.G.

2. Section 3.0 Quality Assurance/Quality Control (Pages 9-24); first paragraph (Page 9). Reference is made to the statement, "Following completion of the RD Plan for each Phase, an addendum may be prepared to include all the necessary physical inspections and testing to ensure, with a reasonable degree of certainty, that the completed construction activities meet or exceed the design criteria, plans and specifications." Will an addendum be prepared or not? Please explain the criteria necessitating an addendum.

3. Section 3.3.2 Technical QA/QC Program. The following comments/observations apply to subsections within this section under Phase Two RA Activities (starting on Page 16). It is understood that the work plan is an outline of tasks. Overall the document is acceptable; however, I did not identify topics/issues such as:

a. Section 3.3.2.2.1 Slurry Wall (Pages 16-18). It appears the MCP will construct an additional slurry wall. Question - during the construction of the slurry wall, are there any circumstances (i.e., possibly weather related), whereby construction would need to be

halted/temporarily delayed? If so, should this issue at least be identified in the work plan as contingencies?

b. Section 3.3.2.3 Solidification of Sludge (Pages 18-19). Reference is made to the second sentence where it is stated, "The impacted soils located in other areas will be excavated and consolidated in the RCRA Subtitle C equivalent cell." Does this sentence mean that sludge contained in the Sludge Pit, Oil Pit, APIs and tanks will be solidified/stabilized in the on-site cell? Or, will the solidified/stabilized material be placed into the on-site cell, as indicated in the last sentence of this paragraph (i.e., top of Page 19)? Please clarify.

c. Section 3.3.2.5 RCRA Subtitle C Equivalent Cell Construction (Pages 20-23); Subsection 3.3.2.5.2 Inspections of Geonet & Geocomposite used for the Leak Detection & Drainage Layer (Pages 20-22). Please consider adding another bullet regarding repairs (i.e., verify that the materials are repaired in accordance with manufacturer's/ industry/ project specifications). This suggestion applies to the Geosynthetic Clay Liner (GCL), HDPE (cell) and LLDPE (cap) Geomembranes, and Non-Woven Geotextiles used with the Leachate Collection System.

4. Section 3.3.2.8 Inspection for Monitoring Well Installation (Pages 23-24). Please include additional bullets such as: verifications of the well pad, outer casing, locking cap, well identification, and bollards (if applicable), and a verification that each well installation report will be included for submittal in the RA Final Report.